

REMARKS

The application has been amended and is believed to be in condition for allowance.

Claims 10, and 13-22 are pending.

The Official Action objected to the disclosure in that the use of the term "Ra" was unclear.

Ra surface roughness is a well known and recognized dimensional unit for quantifying the relative roughness of a surface. For instance, according to the ASM handbook, Volume 18, page 893, Ra expresses surface roughness in terms of arithmetic average (page 893 is attached).

The specification uses other "Ra-parameters", i.e., Ra', Ras and Rar, but these do not represent dimensional units, but rather denote a respective parameter *expressed in units of Ra*, i.e., the combined roughness Ra', carrier contacting face roughness Ras, and the carrier inner contact face roughness Rar.

The specification at page 6 has been amended to resolve the formal issue raised by the Official Action.

Claim 15 has been amended to correct a typo and be consistent with equation (1) found on specification page 5.

In view of the above, reconsideration and withdrawal of the specification objections are respectfully requested.

Claim 14 was indicated to be of improper dependent form. Note that both claims 13 and 14 depend directly from

claim 10. Claim 14 does not depend from claim 13. Accordingly, no amendment is believed necessary.

Claims 15, 10, 13-14, 17-21 and 22 stand rejected as obvious over JP (60-95234), hereinafter JP'234.

Claim 16 stands rejected as obvious over JP'234 in view of HENDRIKS 4,332,575.

In General

In generally, applicants' previous comments concerning HENDRICKS apply to JP'234.

Both references teach the general condition of the interaction/friction between adjacent bands in the carrier. Neither reference teaches optimizing the interaction/friction between the inner surface of the innermost band and the saddle of the elements.

Claim 15

As to claim 15, there is recited that i) a carrier contacting face of each transverse element and ii) an inner contact face (2) of the innermost endless band, contacting the carrier contacting face of each transverse element, have two characteristics, namely:

I) a combined roughness Ra' that is more than $0.6 \mu m$,
and

II) the Ra roughness of the carrier inner contact

face (2) is larger than 0.8 μm .

The claims defines the combined roughness RA' as:

$$Ra' = \text{SQRT} (Ras^2 + Rar^2),$$

Ras being the average roughness parameter of the carrier contacting face of each transverse element expressed in Ra , and

Ra being the average roughness of the carrier inner contact face of the innermost endless band expressed in Ra .

JP' 234

As to JP'234, there is disclosed in the translated Constitution to make "the surface-roughness of either of the inner and outer peripheral surfaces of both surface of the endless metallic belts are made steppedly coarse from either the metallic belt 4e [the innermost belt] or 4d [the belt adjacent the innermost belt] to the outermost layer metallic belt 4a so that the relative positional movement among metallic belts 4a through 4e is restrained, thereby the centering effect may be obtained."

Thus, JP'234 concerns the interaction between the bands of the carrier, i.e., "... by restraining relative movement between the belts ..."; "... from [either] the metallic belt [4e or] 4d to the outermost layer metallic belt 4a...". The disclosure is only of the general condition of "coarse" surface roughness to be applied in the contact between the belts/bands of the carrier. Note that HENDRICKS discloses an optimum range therefor.

However, from this, the Official Action states that

there is a disclosure of "the innermost endless belt band (4e) having a coarse inner surface in contact with the saddle face of the element (5)."

It is acknowledged that the two specific characteristics identified immediately above, are not disclosed by JP'234.

The Official Action states that the recited characteristics are obvious as discovering the optimum or workable ranges involves only routine skill in the art, the general conditions being disclosed in the prior art. In re Aller, 105 USPQ 233 is cited for authority.

Applicants respectfully disagree.

There is no teaching as to the relationship between the inner surface of the innermost belt (4e) and the saddle face of the elements (5).

Even if the inner surface of the innermost belt is made the same as the other belts (4d-4a), that is, the inner surface is the same coarseness for all the belts, there is no teaching that it is advantageous to control the inner surface coarseness with respect to the saddle face of the elements. Absent any such teaching, the inner surface coarseness of the innermost belt (4e) would be the same as the inner surface of the other belts (4d-4a).

Again, both references teach the general condition of the interaction/friction between adjacent bands in the carrier. Neither reference teaches optimizing the interaction/friction between the inner surface of the innermost band and the saddle of

the elements. Further, neither reference teaches the means (increasing surface roughness) or workable range for the interaction between the inner surface of the innermost band and the saddle of the elements.

Absent any such teaching, the prior art would teach away from the present invention.

It is well known that increasing the surface roughness typically also increases friction losses and wear, which is quite opposite what one of skill would normally seek or desire. Such common general knowledge would thus deter one of skill from applying the presently claimed relatively high surface roughness value in the frictional contact between the radially inner surface of the carrier and the transverse elements.

Without the disclosure of the present application, there is no reason one of skill would deviate from the known roughness values of HENDRIKS. Accordingly, the claims are believed to be non-obvious.

Reconsideration and allowance of all the pending claims are respectfully requested.

Other Remarks

On page 5 of the Official Action, it was noted that claim 15 does not recite that the inner surface of the innermost belts has retaining grooves. This is correct. Applicants are not arguing that "the prior art fails to teach that the innermost

surface having a surface profile providing with oil retaining grooves". Indeed, the assignee of this application is the major manufacturer of the present type of driving belt and is aware of the use of surface profiling.

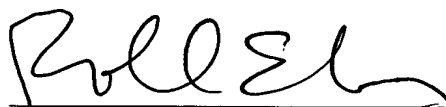
If the claims are not deemed to be non-obvious, entry of this amendment is solicited since this amendment is only formal in nature and the amendment places the case in better form for appeal.

Applicants believe that the present application is in condition for allowance and an early indication of the same is respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

YOUNG & THOMPSON



Roland E. Long, Jr., Reg. No. 41,949
745 South 23rd Street
Arlington, VA 22202
Telephone (703) 521-2297
Telefax (703) 685-0573
(703) 979-4709

REL/lrs

APPENDIX:

The Appendix contains the following item:

- page 893 of the ASM handbook, Volume 18